Metropolitan District Commission - Division of Watershed Management

Wildlife Control Fact Sheet

FS99.06, February 2000

1. Description of Watershed Activity:

MDC land within the Wachusett, Quabbin, and Ware River watersheds provides quality habitat for a variety of wildlife species. The Wachusett and Quabbin reservoirs are home to a number of animals including bald eagles, common loons, and spotted sandpipers. While most wildlife species pose little threat to water quality, there are some that can have potentially negative impacts on the quality of water in the reservoirs. Because it would be impossible and undesirable to control all wildlife species within and around the reservoirs, the MDC has focused its control efforts on specific species of concern. Species were selected based on *a.*) Scientific literature supporting their role in infection and transmission of harmful pathogens *b.*) Their habits (i.e. aquatic) or *c.*) Their location in relation to intake structures. The targeted wildlife species are:

- Gulls (ring-billed, herring, and great blackbacked)
- Canada geese
- Other water birds (ducks, cormorants)
- Beavers
- Muskrats

Human presence (above) is one of the primary ways the MDC Division of Watershed Management discourages birds (right) from nesting at the reservoirs.

2. Goals of the Program:

The goals of the DWM wildlife control program are:

- Minimize or eliminate the presence of gulls, geese, and other waterfowl from the Bird Harassment Zone to control pathogens levels at the intakes
- Eliminate muskrat and beaver from the Aquatic Wildlife Pathogen Control Zone to provide conservative protection from pathogens that can be carried and transmitted by these animals

3. Method of Approach:

The DWM works to acheive these goals through activities in the Bird Harassment Program and Aquatic Mammal Control Program.

Bird Harassment Program:

BACKGROUND

Quabbin and Wachusett reservoirs are seasonally attractive nighttime roost sites for a variety of birds. Ring-billed, herring, and great black-backed gulls, Canada geese, and various species of waterfowl utilize the reservoir from early fall until spring as a nighttime roost and daytime loafing area. Historically, up to 5,000 gulls could be seen using the reservoirs at night. Beginning in 1991, the DWM began to study the relationship between large numbers of roosting birds (gulls, geese) and elevated fecal coliform counts at the intake structures. A strong correlation was noted between birds roosting near each intake and elevated fecal coliform. In response to this study, the DWM initiated a bird harassment program in 1992.

CONTROL ACTIVITIES

The bird harassment program is a year-round effort that involves population monitoring, active harassment, population control, and report writing. The program is most active during the fall and winter when bird numbers peak. The program relies primarily on a human presence in boats and on shore and the use of pyrotechnics (e.g. 12-gauge and .22 shell crackers and screamers).

The primary goal of the program is to eliminate or reduce the number of birds roosting in the Bird Harassment Zone through active and passive harassment techniques. The harassed birds either leave the reservoir or are driven several miles away from each intake. This enables any fecal coliform or pathogens from the birds to settle out or die off before reaching the intakes.

The harassment program is continually evolving and developing new techniques and methods. In addition to active harassment, the DWM has utilized other means to discourage or scare birds out of the harassment zone. Netting has been placed over prominent rocks to prevent birds from landing, scare structures (whirligigs) have been erected in critical areas to deter birds, a mobile sound station was constructed to broadcast distress sounds, and habitat modifications have been made to make areas unattractive to geese and gulls.

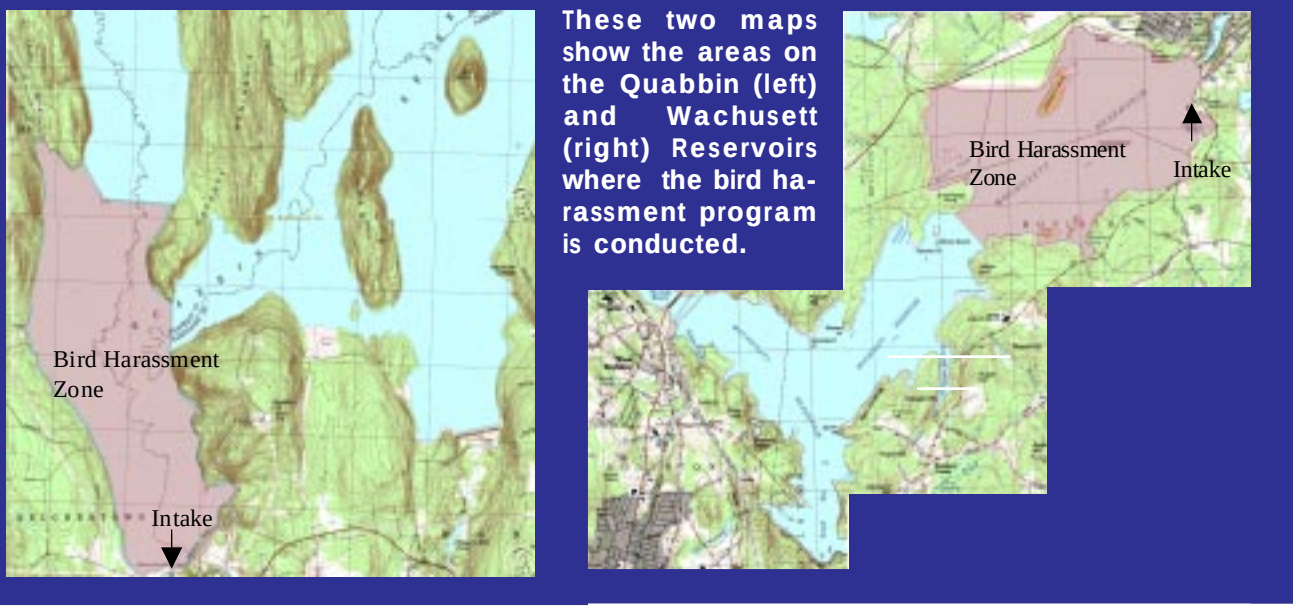
Early in the program, the DWM formed a Bird Harassment Technical Advisory Committee which included the state ornithologist, United States Department of Agriculture-Animal Services personnel, and others. This committee continues to provide insight into harassment techniques and technical support.

Since 1992, the bird harassment program has evolved to include multiple boats, the use of a hovercraft during winter months, and the occasional use of lethal methods to reinforce non-lethal tactics (lethal activities are conducted under a federal permit). As part of the program, the DWM maintains a daily log of activities and prepares regular reports of the program documenting its effectiveness. The harassment program continues to be successful in maintaining water quality standards at each reservoir's intake.

POPULATION CONTROL

A unique feature of Wachusett reservoir was the occurrence of an inland nesting colony of herring gulls on one of the islands. Historical records for the reservoir make reference to large numbers of gulls nesting on the island each summer and the Division's attempts to discourage nesting by collecting the eggs. When the harassment program began in 1992, more diligent efforts were made to eradicate the nesting colony of herring gulls. By 1996, most gulls had given up this nesting site. In 1997, a small colony of ring-billed gulls attempted to nest on the same island. Again, the DWM made dedicated efforts to remove the pairs and their eggs. Since 1997 no nesting attempts have been made by any gull species. The DWM continues to monitor the reservoir for nesting colonies of gulls and will prevent future nesting attempts.

Figure 1: Bird Harassment



These two maps show the areas on the Quabbin (left) and Wachusett (right) Reservoirs where the bird harassment program is conducted.

These photographs show some of the fixed deterrents used in the program. Netting, at left, discourages perching. The floating (middle) and land based (right) installations scare birds with motion and prerecorded distress calls.



Along with monitoring gull-nesting activity, the DWM conducts an intense Canada goose population control program each spring. Approximately 45 pairs of geese nest annually on islands throughout the Wachusett and Quabbin reservoirs. Since 1995, efforts have been made to curb the population growth of Canada geese at the reservoirs. Every year nests are located at each reservoir, and eggs are treated to prevent hatching. While this program does not affect adult Canada geese, it has substantially reduced the number of goslings born each year. This effort will continue in the future.

REGIONAL EFFORTS

The DWM realized several years ago that although gulls roosted on DWM's reservoirs each night, they could travel up to 50 miles a day in search of food. For herring and great black-backed gulls, food was primarily found at state and regional landfills. Beginning in 1997, the DWM began to coordinate with the Department of Environmental Protection (DEP) and MassWildlife to require landfill operators to harass gulls. In 1998, a new policy took effect, and landfills began to actively harass gulls. Harassment efforts continue, and the DWM is active in landfill monitoring and providing technical support.

Aquatic Mammal Control Program:

BACKGROUND

Water supply operators have long suspected the role of beaver in pathogen transmission. In general, muskrats were not considered a priority species. Until recently, the DWM had no formal policy to address beaver or muskrat populations in the reservoirs or in sensitive areas. In 1999, the DWM conducted an extensive literature review and prepared a report, "**Quabbin and Wachusett Reservoir Watersheds Aquatic Wildlife Pathogen Control Zones**" which specifically outlines reasons for controlling beaver and muskrat, zones of control, and types of control that will be used.

CONTROL ACTIVITIES

Within each reservoir's control zone, regular surveys are conducted to document colonies of muskrat and beaver. When individuals or colonies are detected, the DWM actively removes the individuals using live-traps or shooting, in accordance with MassWildlife approved practices.

In addition to actively removing individuals from the control zones, the DWM takes steps to discourage beaver from returning to abandoned sites. The DWM selectively removes preferred trees species along the reservoirs' shoreline, dismantles unoccupied lodges and dens, and removes beaver dams and other structures within the control zone to make the area less attractive to dispersing beaver.

Efforts are made year round to maintain these zones free of muskrat and beaver populations. The DWM works closely with MassWildlife and local Conservation Commissions and regularly reports activities within the control zones.

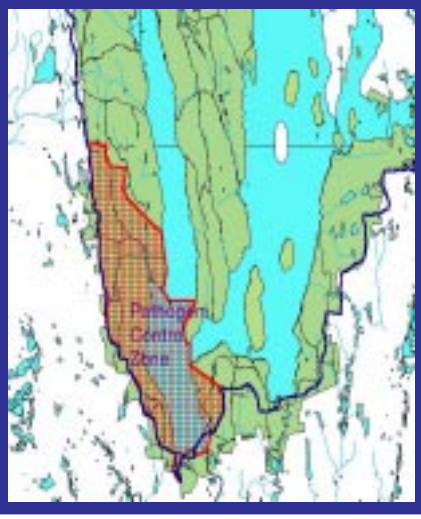
White-tailed Deer Population Control Program:

BACKGROUND

A unique wildlife situation existed at Quabbin Reservation that could have potentially impacted water quality in the reservoir. When Quabbin Reservation was established in the 1940's, the land became off-limits

Figure 2: Aquatic Mammal Control

Shaded areas shown on these two maps, Wachusett Watershed on the left and Quabbin Watershed in the center, denote sensitive areas, or aquatic mammal pathogen control zones, where beavers would have a strong negative affect on water quality. When detected, the animals in these areas must be removed using methods including the use of live traps (shown below).



to hunters and trappers. As a result, the white-tailed deer population within the Reservation grew substantially, reaching densities of approximately 40-60 deer/mi^2 in some areas. Statewide deer densities where hunting is allowed are approximately 12-15 deer/mi^2. The DWM recognized that overbrowsing due to these extremely high deer densities was not allowing young trees to grow and mature. Maintaining healthy forest cover is essential to long-term water quality protection. As Quabbin's forests aged, there was growing concern that there were no young trees ready to replace older trees that might succumb to disease or hurricane. Also, there were concerns that the forest cover would be progressively replaced by a herbaceous cover which would significantly alter the hydrology and water quality of this system. The DWM addressed these concerns through a white-tailed deer population reduction program.

CONTROL ACTIVITIES

In 1991, the DWM initiated a public controlled deer hunt at Quabbin Reservation. Hunters were randomly selected from a pool of applicants and required to attend an orientation session prior to the hunt. Hunters were only allowed to use shotguns, and hunters were encouraged to shoot female deer. Quabbin Reservation has been hunted every year since 1991, and the program continues to evolve and develop.

Deer densities at the Reservation have been substantially reduced as a result of the hunting program. Now densities are closer to 8-12 deer/mi^2, and tree regeneration is becoming more and more evident on the landscape. Hunting occurs on 5 management units for 2-3 days per year during the regular shotgun season. New hunters are still required to attend an orientation, while experienced Quabbin hunters are exempt. Annual reports are prepared summarizing the hunting results, and recommendations are made for the upcoming season. The program will continue to maintain deer densities at levels that allow for continued tree regeneration and growth.

For More information (Reference Number FS99.06)Contact: *Last Revised; Feb, 2000*
Metropolitan District Commission/Division of Watershed Management
20 Somerset Street
Boston, Mass. 02108
Tel: (617) 727-5274 ext. 270
or visit us at: **http://www.state.ma.us/mdc**
Fax: (617) 727-8301